

In the Claims:

1. (Currently Amended) A transceiver preamble for a wireless communications ~~system,~~
system comprising a transmitter configured to generate a [[the]] preamble comprising a sequence wherein the sequence comprises a concatenation of a first set of sub-sequences, with each sub-sequence containing more than one zero, and wherein each sub-sequence ~~can differ~~ differs depending upon its position in the preamble.
2. (Currently Amended) The transceiver preamble of claim 1, wherein the sub-sequences are specified in the time domain.
3. (Currently Amended) The transceiver preamble of claim 1, wherein the preamble further comprises ~~1 further comprising~~ a second sequence wherein the second sequence comprises a concatenation of a second set of sub-sequences, wherein the second set of sub-sequences-differ from the first set of sub-sequences.
4. (Currently Amended) A transceiver preamble for a wireless communications ~~system,~~
system comprising a transmitter configured to generate a [[the]] preamble comprising:
a sequence wherein the sequence comprises a concatenation of a first set of sub-sequences, with each sub-sequence containing a specified number of zeroes, and wherein each sub-sequence can differ depending upon its position in the preamble; and
a second sequence wherein the second sequence comprises a concatenation of a second set of sub-sequences, wherein the second set of sub-sequences differ from the first set of sub-sequences, wherein the second sequence comprises a concatenation of multiple copies of a frequency domain sequence.
5. (Currently Amended) The transceiver preamble of claim 4, wherein the frequency domain sequence is converted into a time domain sequence prior to use in creating the second sequence.

6. (Currently Amended) The transceiver preamble of claim 5, wherein the second sequence comprises six (6) copies of the time domain sequence version of the frequency domain sequence.

7. (Currently Amended) The transceiver preamble of claim 4, wherein the frequency domain sequence specifies Tone Number and Value as follows:

Tone Number	Value	Tone Number	Value	Tone Number	Value	Tone Number	Value
-56	$(1-j)/\sqrt{2}$	-28	$(1-j)/\sqrt{2}$	1	$(1+j)/\sqrt{2}$	29	$(1+j)/\sqrt{2}$
-55	$(-1+j)/\sqrt{2}$	-27	$(1-j)/\sqrt{2}$	2	$-(1+j)/\sqrt{2}$	30	$-(1+j)/\sqrt{2}$
-54	$(-1+j)/\sqrt{2}$	-26	$(-1+j)/\sqrt{2}$	3	$(1+j)/\sqrt{2}$	31	$-(1+j)/\sqrt{2}$
-53	$(1-j)/\sqrt{2}$	-25	$(-1+j)/\sqrt{2}$	4	$-(1+j)/\sqrt{2}$	32	$(1+j)/\sqrt{2}$
-52	$(1-j)/\sqrt{2}$	-24	$(-1+j)/\sqrt{2}$	5	$-(1+j)/\sqrt{2}$	33	$-(1+j)/\sqrt{2}$
-51	$(1-j)/\sqrt{2}$	-23	$(1-j)/\sqrt{2}$	6	$-(1+j)/\sqrt{2}$	34	$-(1+j)/\sqrt{2}$
-50	$(-1+j)/\sqrt{2}$	-22	$(-1+j)/\sqrt{2}$	7	$-(1+j)/\sqrt{2}$	35	$-(1+j)/\sqrt{2}$
-49	$(1-j)/\sqrt{2}$	-21	$(-1+j)/\sqrt{2}$	8	$-(1+j)/\sqrt{2}$	36	$(1+j)/\sqrt{2}$
-48	$(-1+j)/\sqrt{2}$	-20	$(1-j)/\sqrt{2}$	9	$(1+j)/\sqrt{2}$	37	$-(1+j)/\sqrt{2}$
-47	$(-1+j)/\sqrt{2}$	-19	$(-1+j)/\sqrt{2}$	10	$(1+j)/\sqrt{2}$	38	$(1+j)/\sqrt{2}$
-46	$(-1+j)/\sqrt{2}$	-18	$(-1+j)/\sqrt{2}$	11	$(1+j)/\sqrt{2}$	39	$-(1+j)/\sqrt{2}$
-45	$(1-j)/\sqrt{2}$	-17	$(-1+j)/\sqrt{2}$	12	$-(1+j)/\sqrt{2}$	40	$-(1+j)/\sqrt{2}$

-44	$(-1+j)/\sqrt{2}$	-16	$(-1+j)/\sqrt{2}$	13	$(1+j)/\sqrt{2}$	41	$-(1+j)/\sqrt{2}$
-43	$(-1+j)/\sqrt{2}$	-15	$(1-j)/\sqrt{2}$	14	$-(1+j)/\sqrt{2}$	42	$-(1+j)/\sqrt{2}$
-42	$(-1+j)/\sqrt{2}$	-14	$(-1+j)/\sqrt{2}$	15	$(1+j)/\sqrt{2}$	43	$-(1+j)/\sqrt{2}$
-41	$(-1+j)/\sqrt{2}$	-13	$(1-j)/\sqrt{2}$	16	$-(1+j)/\sqrt{2}$	44	$-(1+j)/\sqrt{2}$
-40	$(-1+j)/\sqrt{2}$	-12	$(-1+j)/\sqrt{2}$	17	$-(1+j)/\sqrt{2}$	45	$(1+j)/\sqrt{2}$
-39	$(-1+j)/\sqrt{2}$	-11	$(1-j)/\sqrt{2}$	18	$-(1+j)/\sqrt{2}$	46	$-(1+j)/\sqrt{2}$
-38	$(1-j)/\sqrt{2}$	-10	$(1-j)/\sqrt{2}$	19	$-(1+j)/\sqrt{2}$	47	$-(1+j)/\sqrt{2}$
-37	$(-1+j)/\sqrt{2}$	-9	$(1-j)/\sqrt{2}$	20	$(1+j)/\sqrt{2}$	48	$-(1+j)/\sqrt{2}$
-36	$(1-j)/\sqrt{2}$	-8	$(-1+j)/\sqrt{2}$	21	$-(1+j)/\sqrt{2}$	49	$(1+j)/\sqrt{2}$
-35	$(-1+j)/\sqrt{2}$	-7	$(-1+j)/\sqrt{2}$	22	$-(1+j)/\sqrt{2}$	50	$-(1+j)/\sqrt{2}$
-34	$(-1+j)/\sqrt{2}$	-6	$(-1+j)/\sqrt{2}$	23	$(1+j)/\sqrt{2}$	51	$(1+j)/\sqrt{2}$
-33	$(-1+j)/\sqrt{2}$	-5	$(-1+j)/\sqrt{2}$	24	$-(1+j)/\sqrt{2}$	52	$(1+j)/\sqrt{2}$
-32	$(1-j)/\sqrt{2}$	-4	$(-1+j)/\sqrt{2}$	25	$-(1+j)/\sqrt{2}$	53	$(1+j)/\sqrt{2}$
-31	$(-1+j)/\sqrt{2}$	-3	$(1-j)/\sqrt{2}$	26	$-(1+j)/\sqrt{2}$	54	$-(1+j)/\sqrt{2}$
-30	$(-1+j)/\sqrt{2}$	-2	$(-1+j)/\sqrt{2}$	27	$(1+j)/\sqrt{2}$	55	$-(1+j)/\sqrt{2}$
-29	$(1-j)/\sqrt{2}$	-1	$(1-j)/\sqrt{2}$	28	$(1+j)/\sqrt{2}$	56	$(1+j)/\sqrt{2}$

8. (Currently Amended) The transceiver preamble of claim 4, wherein the frequency domain sequence specifies Tone Number and Value as follows:

Tone Number	Value	Tone Number	Value	Tone Number	Value	Tone Number	Value
-56	1	-28	1	1	1	29	1
-55	-1	-27	-1	2	1	30	1
-54	-1	-26	1	3	1	31	1
-53	1	-25	1	4	1	32	1
-52	-1	-24	1	5	1	33	-1
-51	-1	-23	-1	6	-1	34	-1
-50	1	-22	1	7	-1	35	-1
-49	1	-21	-1	8	1	36	1
-48	-1	-20	1	9	1	37	-1
-47	1	-19	-1	10	1	38	-1
-46	-1	-18	-1	11	-1	39	-1
-45	-1	-17	1	12	1	40	1
-44	-1	-16	-1	13	1	41	1
-43	1	-15	-1	14	-1	42	-1
-42	-1	-14	-1	15	-1	43	1
-41	1	-13	1	16	-1	44	-1
-40	1	-12	1	17	1	45	-1
-39	-1	-11	-1	18	-1	46	-1
-38	-1	-10	1	19	-1	47	1
-37	-1	-9	1	20	1	48	-1
-36	1	-8	1	21	-1	49	1
-35	-1	-7	-1	22	1	50	1
-34	-1	-6	-1	23	-1	51	-1
-33	-1	-5	1	24	1	52	-1
-32	1	-4	1	25	1	53	1
-31	1	-3	1	26	1	54	-1
-30	1	-2	1	27	-1	55	-1
-29	1	-1	1	28	1	56	1

9. (Currently Amended) The transceiver preamble of claim 1, wherein the first sequence comprises:

a third sequence wherein the third sequence comprises a concatenation of multiple copies

of a first sub-sequence; and

a fourth sequence wherein the fourth sequence comprises a concatenation of multiple copies of a fifth sequence comprising 180-degree rotations of each member of the first sub-sequence.

10. (Currently Amended) The transceiver preamble of claim 9, wherein the first sub-sequence is a hierarchical sequence.

11. (Currently Amended) The transceiver preamble of claim 10, wherein the first sub-sequence is created by spreading a first hierarchical sequence with a second hierarchical sequence, wherein the two hierarchical sequences are shorter than the first sub-sequence.

12. (Currently Amended) The transceiver preamble of claim 11, wherein the first hierarchical sequence is a sequence selected from:

Sequence																
#1	1	1	1	1	-1	-1	1	1	-1	-1	1	-1	1	-1	1	1
#2	1	-1	-1	-1	-1	-1	1	-1	1	-1	-1	1	1	-1	-1	1
#3	1	1	-1	-1	-1	1	-1	-1	-1	1	-1	-1	1	-1	1	1
#4	1	-1	-1	1	-1	1	-1	-1	1	1	-1	-1	-1	-1	-1	1

13. (Currently Amended) The transceiver preamble of claim 11, wherein the second hierarchical sequence is a sequence selected from:

Sequence								
#1	1	-1	-1	-1	1	1	-1	1
#2	1	-1	1	1	-1	-1	-1	1
#3	1	1	-1	1	1	-1	-1	-1
#4	1	1	1	-1	-1	1	-1	-1

14. (Currently Amended) The transceiver preamble of claim 11, wherein the time domain sequence specifies Sequence Element and Value as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	1	C ₃₂	-1	C ₆₄	-1	C ₉₆	1
C ₁	-1	C ₃₃	1	C ₆₅	1	C ₉₇	-1
C ₂	-1	C ₃₄	1	C ₆₆	1	C ₉₈	-1
C ₃	-1	C ₃₅	1	C ₆₇	1	C ₉₉	-1
C ₄	1	C ₃₆	-1	C ₆₈	-1	C ₁₀₀	1
C ₅	1	C ₃₇	-1	C ₆₉	-1	C ₁₀₁	1
C ₆	-1	C ₃₈	1	C ₇₀	1	C ₁₀₂	-1
C ₇	1	C ₃₉	-1	C ₇₁	-1	C ₁₀₃	1
C ₈	1	C ₄₀	-1	C ₇₂	-1	C ₁₀₄	-1
C ₉	-1	C ₄₁	1	C ₇₃	1	C ₁₀₅	1
C ₁₀	-1	C ₄₂	1	C ₇₄	1	C ₁₀₆	1
C ₁₁	-1	C ₄₃	1	C ₇₅	1	C ₁₀₇	1
C ₁₂	1	C ₄₄	-1	C ₇₆	-1	C ₁₀₈	-1
C ₁₃	1	C ₄₅	-1	C ₇₇	-1	C ₁₀₉	-1
C ₁₄	-1	C ₄₆	1	C ₇₈	1	C ₁₁₀	1
C ₁₅	1	C ₄₇	-1	C ₇₉	-1	C ₁₁₁	-1
C ₁₆	1	C ₄₈	1	C ₈₀	1	C ₁₁₂	1
C ₁₇	-1	C ₄₉	-1	C ₈₁	-1	C ₁₁₃	-1
C ₁₈	-1	C ₅₀	-1	C ₈₂	-1	C ₁₁₄	-1
C ₁₉	-1	C ₅₁	-1	C ₈₃	-1	C ₁₁₅	-1
C ₂₀	1	C ₅₂	1	C ₈₄	1	C ₁₁₆	1
C ₂₁	1	C ₅₃	1	C ₈₅	1	C ₁₁₇	1
C ₂₂	-1	C ₅₄	-1	C ₈₆	-1	C ₁₁₈	-1
C ₂₃	1	C ₅₅	1	C ₈₇	1	C ₁₁₉	1
C ₂₄	1	C ₅₆	1	C ₈₈	-1	C ₁₂₀	1
C ₂₅	-1	C ₅₇	-1	C ₈₉	1	C ₁₂₁	-1
C ₂₆	-1	C ₅₈	-1	C ₉₀	1	C ₁₂₂	-1
C ₂₇	-1	C ₅₉	-1	C ₉₁	1	C ₁₂₃	-1
C ₂₈	1	C ₆₀	1	C ₉₂	-1	C ₁₂₄	1
C ₂₉	1	C ₆₁	1	C ₉₃	-1	C ₁₂₅	1
C ₃₀	-1	C ₆₂	-1	C ₉₄	1	C ₁₂₆	-1
C ₃₁	1	C ₆₃	1	C ₉₅	-1	C ₁₂₇	1

15. (Currently Amended) The transceiver preamble of claim 11, wherein the time domain sequence specifies Sequence Element and Value as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	1	C ₃₂	-1	C ₆₄	1	C ₉₆	1
C ₁	-1	C ₃₃	1	C ₆₅	-1	C ₉₇	-1
C ₂	1	C ₃₄	-1	C ₆₆	1	C ₉₈	1
C ₃	1	C ₃₅	-1	C ₆₇	1	C ₉₉	1
C ₄	-1	C ₃₆	1	C ₆₈	-1	C ₁₀₀	-1
C ₅	-1	C ₃₇	1	C ₆₉	-1	C ₁₀₁	-1
C ₆	-1	C ₃₈	1	C ₇₀	-1	C ₁₀₂	-1
C ₇	1	C ₃₉	-1	C ₇₁	1	C ₁₀₃	1
C ₈	-1	C ₄₀	-1	C ₇₂	-1	C ₁₀₄	-1
C ₉	1	C ₄₁	1	C ₇₃	1	C ₁₀₅	1
C ₁₀	-1	C ₄₂	-1	C ₇₄	-1	C ₁₀₆	-1
C ₁₁	-1	C ₄₃	-1	C ₇₅	-1	C ₁₀₇	-1
C ₁₂	1	C ₄₄	1	C ₇₆	1	C ₁₀₈	1
C ₁₃	1	C ₄₅	1	C ₇₇	1	C ₁₀₉	1
C ₁₄	1	C ₄₆	1	C ₇₈	1	C ₁₁₀	1
C ₁₅	-1	C ₄₇	-1	C ₇₉	-1	C ₁₁₁	-1
C ₁₆	-1	C ₄₈	1	C ₈₀	-1	C ₁₁₂	-1
C ₁₇	1	C ₄₉	-1	C ₈₁	1	C ₁₁₃	1
C ₁₈	-1	C ₅₀	1	C ₈₂	-1	C ₁₁₄	-1
C ₁₉	-1	C ₅₁	1	C ₈₃	-1	C ₁₁₅	-1
C ₂₀	1	C ₅₂	-1	C ₈₄	1	C ₁₁₆	1
C ₂₁	1	C ₅₃	-1	C ₈₅	1	C ₁₁₇	1
C ₂₂	1	C ₅₄	-1	C ₈₆	1	C ₁₁₈	1
C ₂₃	-1	C ₅₅	1	C ₈₇	-1	C ₁₁₉	-1
C ₂₄	-1	C ₅₆	-1	C ₈₈	1	C ₁₂₀	1
C ₂₅	1	C ₅₇	1	C ₈₉	-1	C ₁₂₁	-1
C ₂₆	-1	C ₅₈	-1	C ₉₀	1	C ₁₂₂	1
C ₂₇	-1	C ₅₉	-1	C ₉₁	1	C ₁₂₃	1
C ₂₈	1	C ₆₀	1	C ₉₂	-1	C ₁₂₄	-1
C ₂₉	1	C ₆₁	1	C ₉₃	-1	C ₁₂₅	-1
C ₃₀	1	C ₆₂	1	C ₉₄	-1	C ₁₂₆	-1
C ₃₁	-1	C ₆₃	-1	C ₉₅	1	C ₁₂₇	1

16. (Currently Amended) The transceiver preamble of claim 11, wherein the time domain sequence specifies Sequence Element and Value as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	1	C ₃₂	-1	C ₆₄	-1	C ₉₆	1
C ₁	1	C ₃₃	-1	C ₆₅	-1	C ₉₇	1
C ₂	-1	C ₃₄	1	C ₆₆	1	C ₉₈	-1

C ₃	1	C ₃₅	-1	C ₆₇	-1	C ₉₉	1
C ₄	1	C ₃₆	-1	C ₆₈	-1	C ₁₀₀	1
C ₅	-1	C ₃₇	1	C ₆₉	1	C ₁₀₁	-1
C ₆	-1	C ₃₈	1	C ₇₀	1	C ₁₀₂	-1
C ₇	-1	C ₃₉	1	C ₇₁	1	C ₁₀₃	-1
C ₈	1	C ₄₀	1	C ₇₂	1	C ₁₀₄	-1
C ₉	1	C ₄₁	1	C ₇₃	1	C ₁₀₅	-1
C ₁₀	-1	C ₄₂	-1	C ₇₄	-1	C ₁₀₆	1
C ₁₁	1	C ₄₃	1	C ₇₅	1	C ₁₀₇	-1
C ₁₂	1	C ₄₄	1	C ₇₆	1	C ₁₀₈	-1
C ₁₃	-1	C ₄₅	-1	C ₇₇	-1	C ₁₀₉	1
C ₁₄	-1	C ₄₆	-1	C ₇₈	-1	C ₁₁₀	1
C ₁₅	-1	C ₄₇	-1	C ₇₉	-1	C ₁₁₁	1
C ₁₆	-1	C ₄₈	-1	C ₈₀	-1	C ₁₁₂	1
C ₁₇	-1	C ₄₉	-1	C ₈₁	-1	C ₁₁₃	1
C ₁₈	1	C ₅₀	1	C ₈₂	1	C ₁₁₄	-1
C ₁₉	-1	C ₅₁	-1	C ₈₃	-1	C ₁₁₅	1
C ₂₀	-1	C ₅₂	-1	C ₈₄	-1	C ₁₁₆	1
C ₂₁	1	C ₅₃	1	C ₈₅	1	C ₁₁₇	-1
C ₂₂	1	C ₅₄	1	C ₈₆	1	C ₁₁₈	-1
C ₂₃	1	C ₅₅	1	C ₈₇	1	C ₁₁₉	-1
C ₂₄	-1	C ₅₆	-1	C ₈₈	-1	C ₁₂₀	1
C ₂₅	-1	C ₅₇	-1	C ₈₉	-1	C ₁₂₁	1
C ₂₆	1	C ₅₈	1	C ₉₀	1	C ₁₂₂	-1
C ₂₇	-1	C ₅₉	-1	C ₉₁	-1	C ₁₂₃	1
C ₂₈	-1	C ₆₀	-1	C ₉₂	-1	C ₁₂₄	1
C ₂₉	1	C ₆₁	1	C ₉₃	1	C ₁₂₅	-1
C ₃₀	1	C ₆₂	1	C ₉₄	1	C ₁₂₆	-1
C ₃₁	1	C ₆₃	1	C ₉₅	1	C ₁₂₇	-1

17. (Currently Amended) The transceiver preamble of claim 11, wherein the time domain sequence specifies Sequence Element and Value as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	1	C ₃₂	-1	C ₆₄	1	C ₉₆	-1
C ₁	1	C ₃₃	-1	C ₆₅	1	C ₉₇	-1
C ₂	1	C ₃₄	-1	C ₆₆	1	C ₉₈	-1
C ₃	-1	C ₃₅	1	C ₆₇	-1	C ₉₉	1
C ₄	-1	C ₃₆	1	C ₆₈	-1	C ₁₀₀	1
C ₅	1	C ₃₇	-1	C ₆₉	1	C ₁₀₁	-1
C ₆	-1	C ₃₈	1	C ₇₀	-1	C ₁₀₂	1
C ₇	-1	C ₃₉	1	C ₇₁	-1	C ₁₀₃	1
C ₈	-1	C ₄₀	1	C ₇₂	1	C ₁₀₄	-1

C ₉	-1	C ₄₁	1	C ₇₃	1	C ₁₀₅	-1
C ₁₀	-1	C ₄₂	1	C ₇₄	1	C ₁₀₆	-1
C ₁₁	1	C ₄₃	-1	C ₇₅	-1	C ₁₀₇	1
C ₁₂	1	C ₄₄	-1	C ₇₆	-1	C ₁₀₈	1
C ₁₃	-1	C ₄₅	1	C ₇₇	1	C ₁₀₉	-1
C ₁₄	1	C ₄₆	-1	C ₇₈	-1	C ₁₁₀	1
C ₁₅	1	C ₄₇	-1	C ₇₉	-1	C ₁₁₁	1
C ₁₆	-1	C ₄₈	-1	C ₈₀	-1	C ₁₁₂	-1
C ₁₇	-1	C ₄₉	-1	C ₈₁	-1	C ₁₁₃	-1
C ₁₈	-1	C ₅₀	-1	C ₈₂	-1	C ₁₁₄	-1
C ₁₉	1	C ₅₁	1	C ₈₃	1	C ₁₁₅	1
C ₂₀	1	C ₅₂	1	C ₈₄	1	C ₁₁₆	1
C ₂₁	-1	C ₅₃	-1	C ₈₅	-1	C ₁₁₇	-1
C ₂₂	1	C ₅₄	1	C ₈₆	1	C ₁₁₈	1
C ₂₃	1	C ₅₅	1	C ₈₇	1	C ₁₁₉	1
C ₂₄	1	C ₅₆	-1	C ₈₈	-1	C ₁₂₀	1
C ₂₅	1	C ₅₇	-1	C ₈₉	-1	C ₁₂₁	1
C ₂₆	1	C ₅₈	-1	C ₉₀	-1	C ₁₂₂	1
C ₂₇	-1	C ₅₉	1	C ₉₁	1	C ₁₂₃	-1
C ₂₈	-1	C ₆₀	1	C ₉₂	1	C ₁₂₄	-1
C ₂₉	1	C ₆₁	-1	C ₉₃	-1	C ₁₂₅	1
C ₃₀	-1	C ₆₂	1	C ₉₄	1	C ₁₂₆	-1
C ₃₁	-1	C ₆₃	1	C ₉₅	1	C ₁₂₇	-1

18. (Currently Amended) The transceiver preamble of claim 9, wherein the third sequence comprises multiple copies of the first sub-sequence combined with a guard band.

19. (Currently Amended) The transceiver preamble of claim 18, wherein the third sequence comprises multiple copies of the first sub-sequence with a postpended guard band and a prepended sequence.

20. (Currently Amended) The transceiver preamble of claim 19, wherein the third sequence comprises twenty one (21) copies of the first sub-sequence with a postpended guard band and a prepended sequence.

21. (Currently Amended) The transceiver preamble of claim 19, wherein the third sequence comprises nine (9) copies of the first sub-sequence with a postpended guard band and a prepended sequence.

22. (Currently Amended) The transceiver preamble of claim 19, wherein the guard band comprises a sequence of five (5) zero samples.
23. (Currently Amended) The transceiver preamble of claim 19, wherein the prepended sequence is a zero-padded sequence.
24. (Currently Amended) The transceiver preamble of claim 19, wherein the prepended sequence is a cyclic prefix.
25. (Currently Amended) The transceiver preamble of claim 9, wherein the fourth sequence comprises multiple copies of the fifth sequence combined with a guard band.
26. (Currently Amended) The transceiver preamble of claim 25, wherein the fourth sequence comprises three (3) copies of the fifth sequence with a postpended guard band and a prepended sequence.
27. (Currently Amended) The transceiver preamble of claim 9, wherein the third sequence comprises multiple concatenated copies of the first sub-sequence, wherein the fourth sequence comprises multiple concatenated copies of the fifth sequence, and wherein the third and fourth sequences are interleaved.
28. (Currently Amended) The transceiver preamble of claim 27, wherein the preamble is used in a communications system that changes transmit frequency based on a transmit code, and wherein the length of the interleaved third and fourth sequence is an integer multiple of a period of the transmit code.
29. (Currently Amended) The transceiver preamble of claim 1, wherein the wireless communications system uses orthogonal frequency division multiple access.
30. (Currently Amended) The transceiver preamble of claim 29, wherein the wireless communications system is a time-frequency interleaved, orthogonal frequency division multiple access communications system.
31. (Currently Amended) The transceiver preamble of claim 1, wherein the preamble can be transformed prior to transmission.

32. (Currently Amended) The transceiver preamble of claim 31, wherein the transformation comprises a time-domain filtering.

33. (Currently Amended) The transceiver preamble of claim 31, wherein the transformation comprises:

- a first domain conversion;
- processing the domain converted preamble; and
- a second domain conversion.

34. (Currently Amended) A transceiver preamble for a wireless communications ~~system~~, system comprising a transmitter configured to generate a [[the]] preamble comprising:

a sequence wherein the sequence comprises a concatenation of a first set of sub-sequences, with each sub-sequence containing a specified number of zeroes;

wherein the preamble can be transformed prior to transmission and wherein each sub-sequence can differ depending upon its position in the preamble, wherein the transformation comprises:

- a first domain conversion;
- processing the domain converted preamble; and
- a second domain conversion, wherein the processing comprises magnitude clipping, and wherein the time domain sequence after the second domain conversion is specified as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	0.6564	C ₃₂	-0.0844	C ₆₄	-0.2095	C ₉₆	0.4232
C ₁	-1.3671	C ₃₃	1.1974	C ₆₅	1.1640	C ₉₇	-1.2684
C ₂	-0.9958	C ₃₄	1.2261	C ₆₆	1.2334	C ₉₈	-1.8151
C ₃	-1.3981	C ₃₅	1.4401	C ₆₇	1.5338	C ₉₉	-1.4829
C ₄	0.8481	C ₃₆	-0.5988	C ₆₈	-0.8844	C ₁₀₀	1.0302
C ₅	1.0892	C ₃₇	-0.4675	C ₆₉	-0.3857	C ₁₀₁	0.9419
C ₆	-0.8621	C ₃₈	0.8520	C ₇₀	0.7730	C ₁₀₂	-1.1472
C ₇	1.1512	C ₃₉	-0.8922	C ₇₁	-0.9754	C ₁₀₃	1.4858
C ₈	0.9602	C ₄₀	-0.5603	C ₇₂	-0.2315	C ₁₀₄	-0.6794
C ₉	-1.3581	C ₄₁	1.1886	C ₇₃	0.5579	C ₁₀₅	0.9573
C ₁₀	-0.8354	C ₄₂	1.1128	C ₇₄	0.4035	C ₁₀₆	1.0807

C ₁₁	-1.3249	C ₄₃	1.0833	C ₇₅	0.4248	C ₁₀₇	1.1445
C ₁₂	1.0964	C ₄₄	-0.9073	C ₇₆	-0.3359	C ₁₀₈	-1.2312
C ₁₃	1.3334	C ₄₅	-1.6227	C ₇₇	-0.9914	C ₁₀₉	-0.6643
C ₁₄	-0.7378	C ₄₆	1.0013	C ₇₈	0.5975	C ₁₁₀	0.3836
C ₁₅	1.3565	C ₄₇	-1.6067	C ₇₉	-0.8408	C ₁₁₁	-1.1482
C ₁₆	0.9361	C ₄₈	0.3360	C ₈₀	0.3587	C ₁₁₂	-0.0353
C ₁₇	-0.8212	C ₄₉	-1.3136	C ₈₁	-0.9604	C ₁₁₃	-0.6747
C ₁₈	-0.2662	C ₅₀	-1.4448	C ₈₂	-1.0002	C ₁₁₄	-1.1653
C ₁₉	-0.6866	C ₅₁	-1.7238	C ₈₃	-1.1636	C ₁₁₅	-0.8896
C ₂₀	0.8437	C ₅₂	1.0287	C ₈₄	0.9590	C ₁₁₆	0.2414
C ₂₁	1.1237	C ₅₃	0.6100	C ₈₅	0.7137	C ₁₁₇	0.1160
C ₂₂	-0.3265	C ₅₄	-0.9237	C ₈₆	-0.6776	C ₁₁₈	-0.6987
C ₂₃	1.0511	C ₅₅	1.2618	C ₈₇	0.9824	C ₁₁₉	0.4781
C ₂₄	0.7927	C ₅₆	0.5974	C ₈₈	-0.5454	C ₁₂₀	0.1821
C ₂₅	-0.3363	C ₅₇	-1.0976	C ₈₉	1.1022	C ₁₂₁	-1.0672
C ₂₆	-0.1342	C ₅₈	-0.9776	C ₉₀	1.6485	C ₁₂₂	-0.9676
C ₂₇	-0.1546	C ₅₉	-0.9982	C ₉₁	1.3307	C ₁₂₃	-1.2321
C ₂₈	0.6955	C ₆₀	0.8967	C ₉₂	-1.2852	C ₁₂₄	0.5003
C ₂₉	1.0608	C ₆₁	1.7640	C ₉₃	-1.2659	C ₁₂₅	0.7419
C ₃₀	-0.1600	C ₆₂	-1.0211	C ₉₄	0.9435	C ₁₂₆	-0.8934
C ₃₁	0.9442	C ₆₃	1.6913	C ₉₅	-1.6809	C ₁₂₇	0.8391

35. (Currently Amended) The transceiver preamble of claim 33, wherein the processing comprises magnitude clipping, and wherein the time domain sequence after the second domain conversion is specified as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	0.9679	C ₃₂	-1.2905	C ₆₄	1.5280	C ₉₆	0.5193
C ₁	-1.0186	C ₃₃	1.1040	C ₆₅	-0.9193	C ₉₇	-0.3439
C ₂	0.4883	C ₃₄	-1.2408	C ₆₆	1.1246	C ₉₈	0.1428
C ₃	0.5432	C ₃₅	-0.8062	C ₆₇	1.2622	C ₉₉	0.6251
C ₄	-1.4702	C ₃₆	1.5425	C ₆₈	-1.4406	C ₁₀₀	-1.0468
C ₅	-1.4507	C ₃₇	1.0955	C ₆₉	-1.4929	C ₁₀₁	-0.5798
C ₆	-1.1752	C ₃₈	1.4284	C ₇₀	-1.1508	C ₁₀₂	-0.8237
C ₇	-0.0730	C ₃₉	-0.4593	C ₇₁	0.4126	C ₁₀₃	0.2667
C ₈	-1.2445	C ₄₀	-1.0408	C ₇₂	-1.0462	C ₁₀₄	-0.9563
C ₉	0.3143	C ₄₁	1.0542	C ₇₃	0.7232	C ₁₀₅	0.6016
C ₁₀	-1.3951	C ₄₂	-0.4446	C ₇₄	-1.1574	C ₁₀₆	-0.9964
C ₁₁	-0.9694	C ₄₃	-0.7929	C ₇₅	-0.7102	C ₁₀₇	-0.3541
C ₁₂	0.4563	C ₄₄	1.6733	C ₇₆	0.8502	C ₁₀₈	0.3965

C ₁₃	0.3073	C ₄₅	1.7568	C ₇₇	0.6260	C ₁₀₉	0.5201
C ₁₄	0.6408	C ₄₆	1.3273	C ₇₈	0.9530	C ₁₁₀	0.4733
C ₁₅	-0.9798	C ₄₇	-0.2465	C ₇₉	-0.4971	C ₁₁₁	-0.2362
C ₁₆	-1.4116	C ₄₈	1.6850	C ₈₀	-0.8633	C ₁₁₂	-0.6892
C ₁₇	0.6038	C ₄₉	-0.7091	C ₈₁	0.6910	C ₁₁₃	0.4787
C ₁₈	-1.3860	C ₅₀	1.1396	C ₈₂	-0.3639	C ₁₁₄	-0.2605
C ₁₉	-1.0888	C ₅₁	1.5114	C ₈₃	-0.8874	C ₁₁₅	-0.5887
C ₂₀	1.1036	C ₅₂	-1.4343	C ₈₄	1.5311	C ₁₁₆	0.9411
C ₂₁	0.7067	C ₅₃	-1.5005	C ₈₅	1.1546	C ₁₁₇	0.7364
C ₂₂	1.1667	C ₅₄	-1.2572	C ₈₆	1.1935	C ₁₁₈	0.6714
C ₂₃	-1.0225	C ₅₅	0.8274	C ₈₇	-0.2930	C ₁₁₉	-0.1746
C ₂₄	-1.2471	C ₅₆	-1.5140	C ₈₈	1.3285	C ₁₂₀	1.1776
C ₂₅	0.7788	C ₅₇	1.1421	C ₈₉	-0.7231	C ₁₂₁	-0.8803
C ₂₆	-1.2716	C ₅₈	-1.0135	C ₉₀	1.2832	C ₁₂₂	1.2542
C ₂₇	-0.8745	C ₅₉	-1.0657	C ₉₁	0.7878	C ₁₂₃	0.5111
C ₂₈	1.2175	C ₆₀	1.4073	C ₉₂	-0.8095	C ₁₂₄	-0.8209
C ₂₉	0.8419	C ₆₁	1.8196	C ₉₃	-0.7463	C ₁₂₅	-0.8975
C ₃₀	1.2881	C ₆₂	1.1679	C ₉₄	-0.8973	C ₁₂₆	-0.9091
C ₃₁	-0.8210	C ₆₃	-0.4131	C ₉₅	0.5560	C ₁₂₇	0.2562

36. (Currently Amended) The transceiver preamble of claim 33, wherein the processing comprises magnitude clipping, and wherein the time domain sequence after the second domain conversion is specified as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	0.4047	C ₃₂	-0.9671	C ₆₄	-0.7298	C ₉₆	0.2424
C ₁	0.5799	C ₃₃	-0.9819	C ₆₅	-0.9662	C ₉₇	0.5703
C ₂	-0.3407	C ₃₄	0.7980	C ₆₆	0.9694	C ₉₈	-0.6381
C ₃	0.4343	C ₃₅	-0.8158	C ₆₇	-0.8053	C ₉₉	0.7861
C ₄	0.0973	C ₃₆	-0.9188	C ₆₈	-0.9052	C ₁₀₀	0.9175
C ₅	-0.7637	C ₃₇	1.5146	C ₆₉	1.5933	C ₁₀₁	-0.4595
C ₆	-0.6181	C ₃₈	0.8138	C ₇₀	0.8418	C ₁₀₂	-0.2201
C ₇	-0.6539	C ₃₉	1.3773	C ₇₁	1.5363	C ₁₀₃	-0.7755
C ₈	0.3768	C ₄₀	0.2108	C ₇₂	0.3085	C ₁₀₄	-0.2965
C ₉	0.7241	C ₄₁	0.9245	C ₇₃	1.3016	C ₁₀₅	-1.1220
C ₁₀	-1.2095	C ₄₂	-1.2138	C ₇₄	-1.5546	C ₁₀₆	1.7152
C ₁₁	0.6027	C ₄₃	1.1252	C ₇₅	1.5347	C ₁₀₇	-1.2756
C ₁₂	0.4587	C ₄₄	0.9663	C ₇₆	1.0935	C ₁₀₈	-0.7731
C ₁₃	-1.3879	C ₄₅	-0.8418	C ₇₇	-0.8978	C ₁₀₉	1.0724
C ₁₄	-1.0592	C ₄₆	-0.6811	C ₇₈	-0.9712	C ₁₁₀	1.1733
C ₁₅	-1.4052	C ₄₇	-1.3003	C ₇₉	-1.3763	C ₁₁₁	1.4711

C ₁₆	-0.8439	C ₄₈	-0.3397	C ₈₀	-0.6360	C ₁₁₂	0.4881
C ₁₇	-1.5992	C ₄₉	-1.1051	C ₈₁	-1.2947	C ₁₁₃	0.7528
C ₁₈	1.1975	C ₅₀	1.2400	C ₈₂	1.6436	C ₁₁₄	-0.6417
C ₁₉	-1.9525	C ₅₁	-1.3975	C ₈₃	-1.6564	C ₁₁₅	1.0363
C ₂₀	-1.5141	C ₅₂	-0.7467	C ₈₄	-1.1981	C ₁₁₆	0.8002
C ₂₁	0.7219	C ₅₃	0.2706	C ₈₅	0.8719	C ₁₁₇	-0.0077
C ₂₂	0.6982	C ₅₄	0.7294	C ₈₆	0.9992	C ₁₁₈	-0.2336
C ₂₃	1.2924	C ₅₅	0.7444	C ₈₇	1.4872	C ₁₁₉	-0.4653
C ₂₄	-0.9460	C ₅₆	-0.3970	C ₈₈	-0.4586	C ₁₂₀	0.6862
C ₂₅	-1.2407	C ₅₇	-1.0718	C ₈₉	-0.8404	C ₁₂₁	1.2716
C ₂₆	0.4572	C ₅₈	0.6646	C ₉₀	0.6982	C ₁₂₂	-0.8880
C ₂₇	-1.2151	C ₅₉	-1.1037	C ₉₁	-0.7959	C ₁₂₃	1.4011
C ₂₈	-0.9869	C ₆₀	-0.5716	C ₉₂	-0.5692	C ₁₂₄	0.9531
C ₂₉	1.2792	C ₆₁	0.9001	C ₉₃	1.3528	C ₁₂₅	-1.1210
C ₃₀	0.6882	C ₆₂	0.7317	C ₉₄	0.9536	C ₁₂₆	-0.9489
C ₃₁	1.2586	C ₆₃	0.9846	C ₉₅	1.1784	C ₁₂₇	-1.2566

37. (Currently Amended) The transceiver preamble of claim 33, wherein the processing comprises magnitude clipping, and wherein the time domain sequence after the second domain conversion is specified as follows:

Sequence Element	Value	Sequence Element	Value	Sequence Element	Value	Sequence Element	Value
C ₀	1.1549	C ₃₂	-1.2385	C ₆₄	1.3095	C ₉₆	-1.0094
C ₁	1.0079	C ₃₃	-0.7883	C ₆₅	0.6675	C ₉₇	-0.7598
C ₂	0.7356	C ₃₄	-0.7954	C ₆₆	1.2587	C ₉₈	-1.0786
C ₃	-0.7434	C ₃₅	1.0874	C ₆₇	-0.9993	C ₉₉	0.6699
C ₄	-1.3930	C ₃₆	1.1491	C ₆₈	-1.0052	C ₁₀₀	0.9813
C ₅	1.2818	C ₃₇	-1.4780	C ₆₉	0.6601	C ₁₀₁	-0.5563
C ₆	-1.1033	C ₃₈	0.8870	C ₇₀	-1.0228	C ₁₀₂	1.0548
C ₇	-0.2523	C ₃₉	0.4694	C ₇₁	-0.7489	C ₁₀₃	0.8925
C ₈	-0.7905	C ₄₀	1.5066	C ₇₂	0.5086	C ₁₀₄	-1.3656
C ₉	-0.4261	C ₄₁	1.1266	C ₇₃	0.1563	C ₁₀₅	-0.8472
C ₁₀	-0.9390	C ₄₂	0.9935	C ₇₄	0.0673	C ₁₀₆	-1.3110
C ₁₁	0.4345	C ₄₃	-1.2462	C ₇₅	-0.8375	C ₁₀₇	1.1897
C ₁₂	0.4433	C ₄₄	-1.7869	C ₇₆	-1.0746	C ₁₀₈	1.5127
C ₁₃	-0.3076	C ₄₅	1.7462	C ₇₇	0.4454	C ₁₀₉	-0.7474
C ₁₄	0.5644	C ₄₆	-1.4881	C ₇₈	-0.7831	C ₁₁₀	1.4678
C ₁₅	0.2571	C ₄₇	-0.4090	C ₇₉	-0.3623	C ₁₁₁	1.0295
C ₁₆	-1.0030	C ₄₈	-1.4694	C ₈₀	-1.3658	C ₁₁₂	-0.9210
C ₁₇	-0.7820	C ₄₉	-0.7923	C ₈₁	-1.0854	C ₁₁₃	-0.4784
C ₁₈	-0.4064	C ₅₀	-1.4607	C ₈₂	-1.4923	C ₁₁₄	-0.5022

C ₁₉	0.9034	C ₅₁	0.9113	C ₈₃	0.4233	C ₁₁₅	1.2153
C ₂₀	1.5406	C ₅₂	0.8454	C ₈₄	0.6741	C ₁₁₆	1.5783
C ₂₁	-1.4613	C ₅₃	-0.8866	C ₈₅	-1.0157	C ₁₁₇	-0.7718
C ₂₂	1.2745	C ₅₄	0.8852	C ₈₆	0.8304	C ₁₁₈	1.2384
C ₂₃	0.3715	C ₅₅	0.4918	C ₈₇	0.4878	C ₁₁₉	0.6695
C ₂₄	1.8134	C ₅₆	-0.6096	C ₈₈	-1.4992	C ₁₂₀	0.8821
C ₂₅	0.9438	C ₅₇	-0.4321	C ₈₉	-1.1884	C ₁₂₁	0.7807
C ₂₆	1.3130	C ₅₈	-0.1327	C ₉₀	-1.4008	C ₁₂₂	1.0537
C ₂₇	-1.3070	C ₅₉	0.4953	C ₉₁	0.7795	C ₁₂₃	-0.0791
C ₂₈	-1.3462	C ₆₀	0.9702	C ₉₂	1.2926	C ₁₂₄	-0.2845
C ₂₉	1.6868	C ₆₁	-0.8667	C ₉₃	-1.2049	C ₁₂₅	0.5790
C ₃₀	-1.2153	C ₆₂	0.6803	C ₉₄	1.2934	C ₁₂₆	-0.4664
C ₃₁	-0.6778	C ₆₃	-0.0244	C ₉₅	0.8123	C ₁₂₇	-0.1097

38. (Currently Amended) The transceiver preamble of claim 31, wherein the preamble can be transformed prior to use and stored in a memory.

39-57. (Canceled)